

FLOOD RISK ASSESSMENT

Double storey extension at:
Washpool Cottage,
Washpool,
Treacle Bolley,
Marlborough,
Wilts SN8 4DJ

The Property

Washpool Cottage is a two-bedroom, two storey dwelling house with recent extensions. The proposal is to extend to the side two stories, on the footprint of previously approved PL/2022/08316 single storey extension. The ground floor extensions are to be formed at the same FFL as the existing Cottage.

The information relevant to the flood level context of the site is:

Existing FFL of ground floor	=	128.07
Proposed FFL of ground floor	=	128.07
Existing Flood Level 1:5yr	=	127.10
Existing Flood Level 1:20yr	=	127.29
Existing Flood Level 1:100yr	=	127.71
Existing Flood Level 1:100+cc(20%)	=	127.87
Existing Flood Level 1:1000yr	=	128.14

The interpretation of the information is that the proposed FFL is 0.07m below the 1:1000 year flood level, placing the flood depth outside the building in the category of 'less than 0.3m above FFL' and the application 'Water Exclusion Strategy' measures where possible in the construction of the extensions.

Formal Guidance and Policy

Previous similar applications have been successful. Previous advice after consultation with Environment Agency for their assessment on the nature, context and impact of them on the site flood level constraints. Ms Ellie Challans (Planning Advisor - Wessex Sustainable Places - Environment Agency) offered the following advice response:

"this [previous] proposal would constitute an extension which would fall under Flood Risk Standing Advice. This states that finished floor levels must be set as

existing or higher. As you do not wish to raise floor levels we would advise you to include flood resistance and resilience techniques during design and construction, e.g. bringing electrics in at a high level, hard floors that can withstand flood water ingress etc.”

Therefore, in accordance with the above advice we have consulted, and followed the guidance contained in the Government’s (Communities & Local Govt) ‘Improving the Flood Performance of New Buildings - Flood Resilient Construction’ as part of the advised Flood Resistance and Resilient Techniques.

The status of the proposals as an ‘extension’ means that only a level of information detail relevant to that category is required for this submission and FRA documentation rather than a fully modelled appraisal as would be required for ‘new development’ in Zone 3a.

In accordance with the indicative flood maps published by the Environment Agency, the site appears to lie within an area at risk of flooding. This FRA report has been prepared in accordance with the requirements contained within National Planning Policy Framework (NPPF, March 2012) and the associated Technical Guidance. The guidance refers to the Environment Agency’s “standing advice” on flood risk. Based on requirements set by the Environment Agency, a Flood Risk assessment is needed to support the planning application.

This report has been prepared in accordance with (i) National Planning Policy Framework (NPPF), (Department for Communities and Local Government, March 2012) and the accompanying (ii) Technical Guidance to the National Planning Policy Framework (Department for Communities and Local Government, March 2012); (iii) Strategic Flood Risk Assessment, High Level Executive Summary, undertaken on behalf of Wilshire (iv) Level 1 Strategic Flood Risk Assessment undertaken on behalf of Kennet District Council; (v) Other statutory laws and local bylaws and rules.

Paragraph 9 of the Technical Guidance to the National Planning Policy Framework states that “...local planning authorities should only consider development in flood risk areas appropriate where informed by a site-specific flood risk assessment. This should identify and assess the risks of all forms for flooding to and from the development and demonstrate how these flood risks will be managed so that the development remains safe throughout its lifetime, taking climate change into account”

Proximity to Main River:

The previous application raised a concern that the proposed extension would be located within 8m of the Main River. This encroachment is discouraged by the Environment Agency because “the Environment Agency may need access to the river on both sides for future maintenance obligations. And for this we may need adequate access space for machinery”. Permits can be granted for such encroachment at the discretion of the EA and the comments below demonstrate justification that such would be appropriate. Although the existing cottage is already within the 8m, the bulk of the proposed extension is built away from the Main river. The proposed side extension sits on the footprint of a previously approved scheme and this encroachment is already established.

The watercourse to the rear of the cottage is a tributary and it may be inaccurate to describe it as a ‘main river’.

Site Context:

The proposed development is located at National Grid Reference (NGR) 418624, 168453 at Washpool Cottage, Treacle Bolley, Marlborough, SN8 4DJ. The site is currently a residential cottage/dwelling, situated on the south side, that backs onto a tributary of the River Kennet that runs parallel with the southern boundary. The River Kennet itself runs adjacent the northern boundary. The site is accessed by a private track, approximately 180m long, which adjoins Pewsey Road. The track bridges the tributary to provide access to the dwelling.

The development site is relatively flat with ground levels across the site varying between approximately 128m and 127m Above Ordnance Datum (AOD). The site falls north towards the River Kennet with the existing cottage situated at the high level of the site.

Drainage:

There are traditional downpipes and gullies serving the existing cottage. A site walkover identified a piped outfall into the tributary to the rear of the cottage, where surface water from the roof is discharged. Given the age of the existing cottage, it is assumed that surface water discharges into the watercourse at an unrestricted rate.

The proposal is to maintain the existing foul and storm drainage provision for this single dwelling house as it continues to remain as a single dwelling house. The upgrade of the cottage to use sanitaryware, fixtures & fittings with controlled flow rate capability will improve the current outfall rates of the existing established dwelling house.

Flooding Probability

The NPPF identifies six potential sources of flooding:-

1. Flooding from rivers (fluvial flooding);
2. Flooding from the sea (tidal flooding);
3. Flooding from land;
4. Flooding from sewers;
5. Flooding from groundwater;
6. Flooding from reservoirs, canals, and other artificial sources.

1. Flooding from rivers (fluvial flooding) & sea (tidal flooding):

The assessment of flood risk in this report is based on the definitions in Table 1 of the Technical Guidance to the National Planning Policy Framework, which recognises the following Flood Zones:

- Flood Zone 1 - little or no risk, with annual probability of flooding from rivers and the sea of less than 0.1% (1 in 1000-year)
- Flood Zone 2 - low to medium risk, with annual probability of flooding between 0.1% and 1.0% from rivers and between 0.1% and 0.5% from the sea
- Flood Zone 3a - high risk of flooding with an annual probability of flooding of 1.0% or greater from rivers, and 0.5% or greater from the sea.
- Flood Zone 3b - the 'Functional Floodplain' with an annual probability of flooding of 5% or greater.

The existing cottage floor level is lower than the 1:1000yr flood level and therefore floods during this event. It is protected during the modelled 100yr and 100yrCC events. The cottage is an existing dwelling house with no requirement to justify the existing FFL in relation to the flood levels. The extensions areas will be formed at the same current FFL and maintain the current status which is considered suitable for continued use of the building and site as a single private dwelling house.

Access/egress to the site is impaired during extreme flood events, with the bridged access flooding during the 100yr and 100yrCC events. The gravel track becomes inundated with flood water during the 100year storm event. Therefore

evacuation is crucial in advance of flood water advancing to the site. There is an existing external stairway at the west end of the access track which provides pedestrian ingress and egress to the site from (and to) Granham Close which is some 2.5m above the 1:1000yr flood level. This established escape route is approximate 25m from the cottage and therefore substantially reduces the vehicle access via the long track to the adopted highway.

The flood level for this evacuation length of the track is 127.71 which is between 50mm & 170mm submersion when inundated. This is not an insignificant amount but neither is it more than a modest one that can be negotiated by foot rather than needing to await rescue vehicles from outside the site. The absence of a pedestrian footpath along the access track signifies that Washpool Cottage is currently only accessible by vehicle. Therefore vehicles will almost certainly be available to the owners for evacuating the site as has been the case for the current and previous owners of the cottage for many decades. The extensions areas maintain the current evacuation status, without exacerbation, which is considered suitable for continued use of the building and site as a single private dwelling house even if these current proposals are not implemented.

Historic flood event information provided within the EA product 4 data shows the site as being unaffected during the 1979, 1992 & 2024 flood events.

3 & 4. Flooding from land & sewers:

Given the relative isolation of the site and the distance between these postcodes, flooding from sewers is not considered to be a significant source of flooding at the site.

5. Flooding from groundwater:

Groundwater flooding typically occurs after prolonged rainfall, causing the water table to increase above normal levels. It is most likely to flood in low-lying areas underlain by permeable strata (aquifers).

BGS data indicates the site as being underlain by superficial deposits of alluvium comprising clay, silt, sands and gravels. The underlying bedrock comprises of the Lewes Nodular Chalk Formation, classified as a Principle Aquifer exhibiting high permeability.

With reference to section 4.2.6 of the Kennet District Council Level 1 SFRA the groundwater level is indicated as being approximately 125mAOD at the site and its surrounding area, approximately 2m bgl. Superficial (drift) deposits are typically drained by the surface watercourses running through them and so

when levels in these watercourses are high, in this case the River Kennet, less groundwater can drain away.

Whilst there are no records of groundwater flooding at the site, the site is deemed to be at risk of groundwater flooding due to the high water-table in the area and the Principal Aquifer underlying the site. Having said this, the likeliest causes of groundwater level fluctuations at the site would be due to prolonged extreme rainfall and in hydraulic continuity with higher water levels in the River Kennet. In such occurrences, it is fluvial flooding that presents the highest flood risk, as discussed previously.

6. Flooding from reservoirs, canals, and other artificial sources:

The site is not at risk of flooding from reservoirs. The Avon Canal is approximately 5.5km south of the site. With reference to section 4.2.8 of the Kennet District Council Level 1 SFRA, no records of historic flooding exist from this canal.

Based on the above, flooding from reservoirs and other artificial sources is not considered to be a significant source of flooding at the site.

Conclusion - Flood Risk Management & Mitigation:

Extreme rainfall events are generally predictable and adequate warning is typically provided by the Environment Agency via locally broadcasted media as well as their own free “Floodline” warning service. The site benefits from being in an EA “Floodline” warning area, allowing the owners/occupiers to receive free alerts directly well in advance of flood water reaching the site, ensuring of safe egress and evacuation. By signing up to the flood warning service, the owners/occupiers will receive warnings by phone, email or text message.

Compliance measures are recommended for the proposed extensions in accordance with ‘Improving the Flood Performance of New Buildings - Flood Resilient Construction’, using Water Exclusion Strategy techniques to suit the proposed (and existing) FFL being only 0.07m below the outside building flood level. The recommendations for these proposals are:

- Meters, boilers and electrical sockets to be placed 300mm above 1:1000yr flood level.
- Double storey construction used. Single storey construction deemed ‘not appropriate’ in flood zones under these guidelines. These proposals upgrade the existing single storey extension to double storey to provide increased areas of higher level accommodation for awaiting rescue or a return to normal water levels.
- Engineering bricks to be used in new walls up to 300mm above dpc.
- Water retaining concrete employed.
- Wet plaster used internally rather than plasterboard.
- Trench fill foundations employed to reduce extent of masonry below ground.
- 150mm thick concrete floor slab.
- 1200g dpm with 300mm overlaps and 50mm taped joints.
- Avoid use of concrete screeds.
- Use sand cement screeds or sacrificial timber floating floor finish.
- Side extension formed in solid walls with externally insulated render finish.
- Use closed cell insulation.
- Cavity walls to rear extension to use partial fill closed cell insulation only.

- Doors & windows to be double glazed. Timber doors to be solid core only. Guidelines recommend use of Upvc but local planning constraints may restrict the use of Upvc.
- Seal perimeter of Utility & Kitchen units to avoid water penetration.
- COMMS incoming services wiring to be protected.

Further recommended measures considered but deemed unsuitable:

- Raise ground level to create high ground level in approach to external evacuation steps. The site is in an area of minimal change and for now the assessment was made, on balance, that this may outweigh the benefits of the evacuation enhancement. However, we welcome comments from the planning officer if the opposite is felt to be true.
- Higher thresholds considered but existing FFL is established and low ceiling heights impact on this approach.

This is considered to be a proportionate assessment of the flood risk relative the 'minor extension' proposed.